

Figure 1 Comparison of  $H_2S$  adsorption on  $SiO_2$  and  $AgNO_3/SiO_2$  at  $70^\circ C$

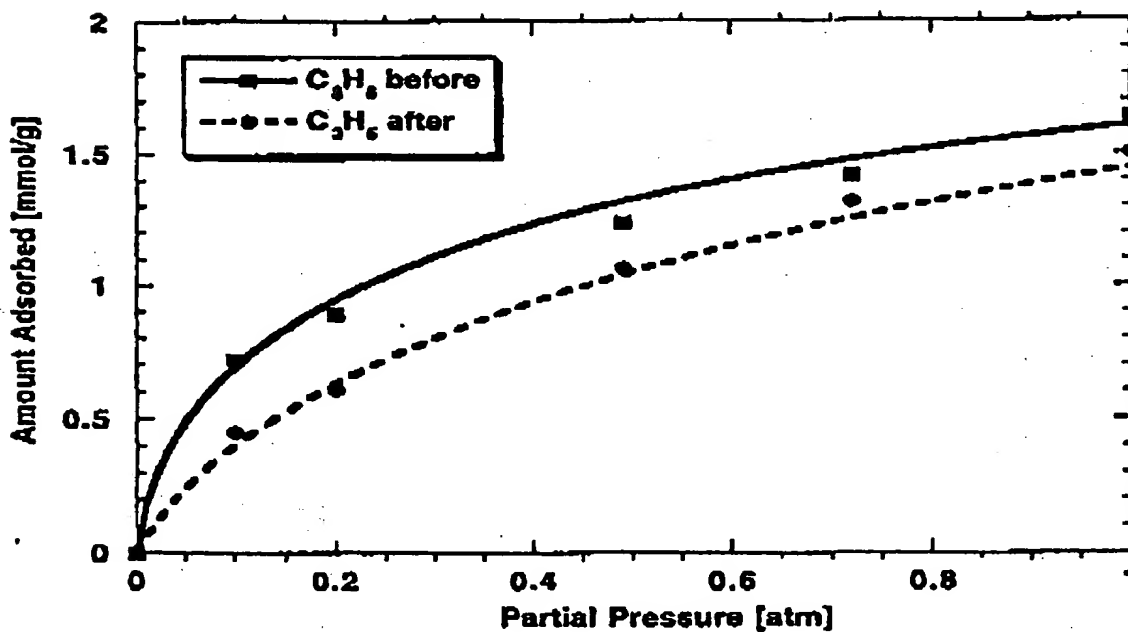


Figure 2  $H_2S$  effect on olefin adsorption on  $AgNO_3/SiO_2$ .

# $C_2H_4$ Cyclic Adsorption on $AgNO_3/SiO_2$

Isotherm @ 50 °C; P = 1 atm

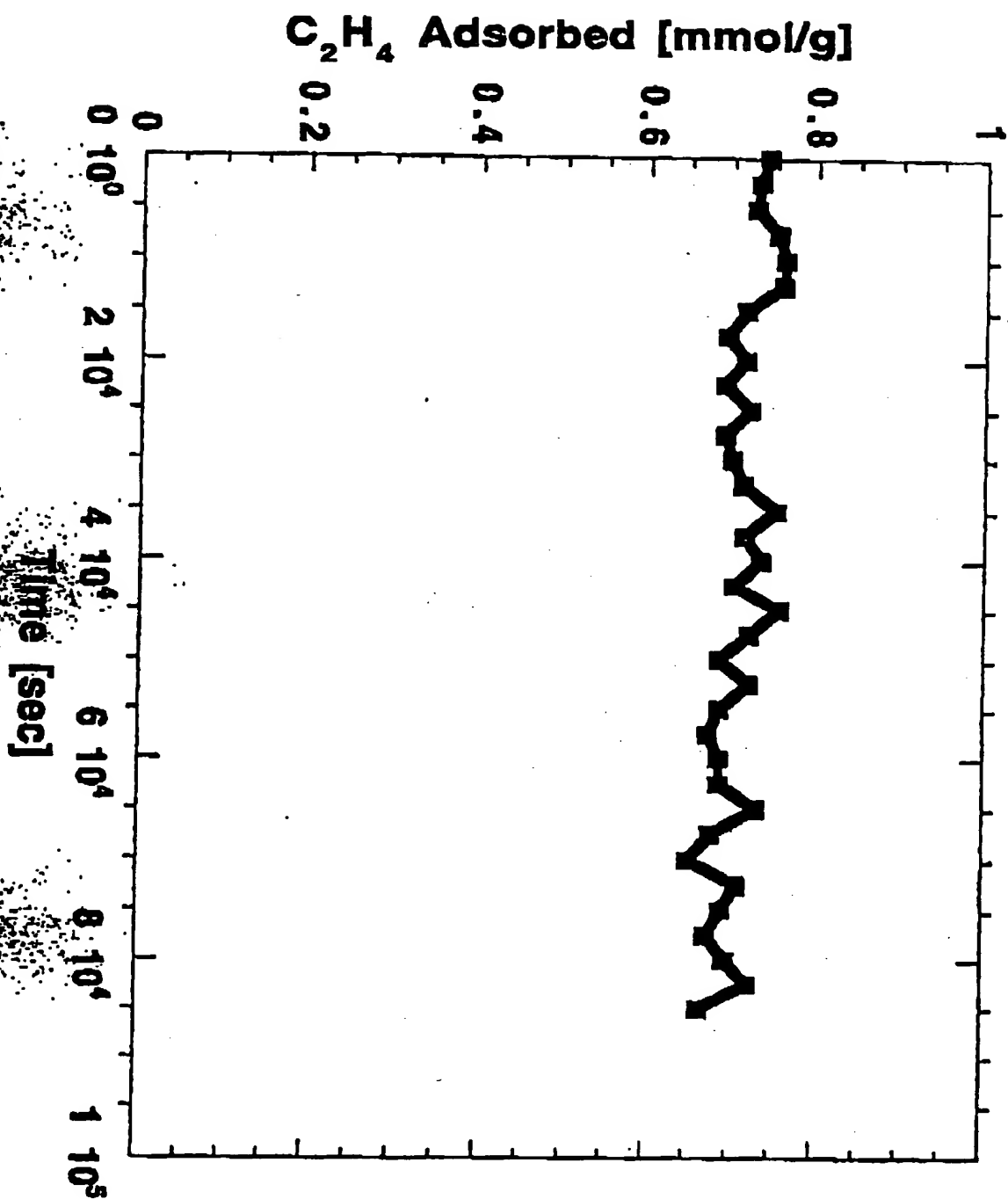
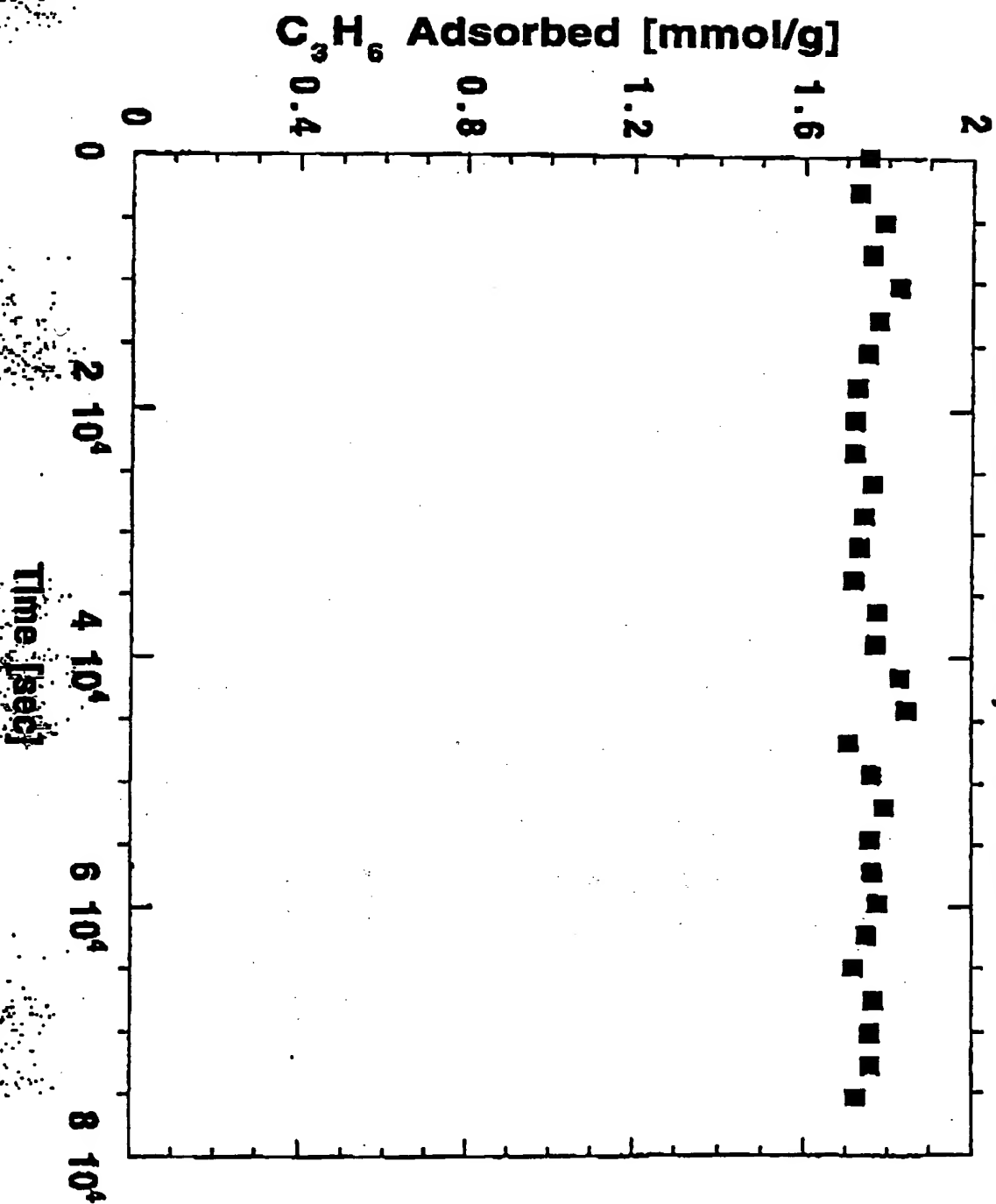


Fig 3

# $C_3H_6$ Cyclic Adsorption on $AgNO_3/SiO_2$

Isotherm @ 50 °C; P = 1 atm



# $C_3H_6$ Cyclic Adsorption on $AgNO_3/SiO_2$

Isotherm @ 120 °C; P = 1 atm

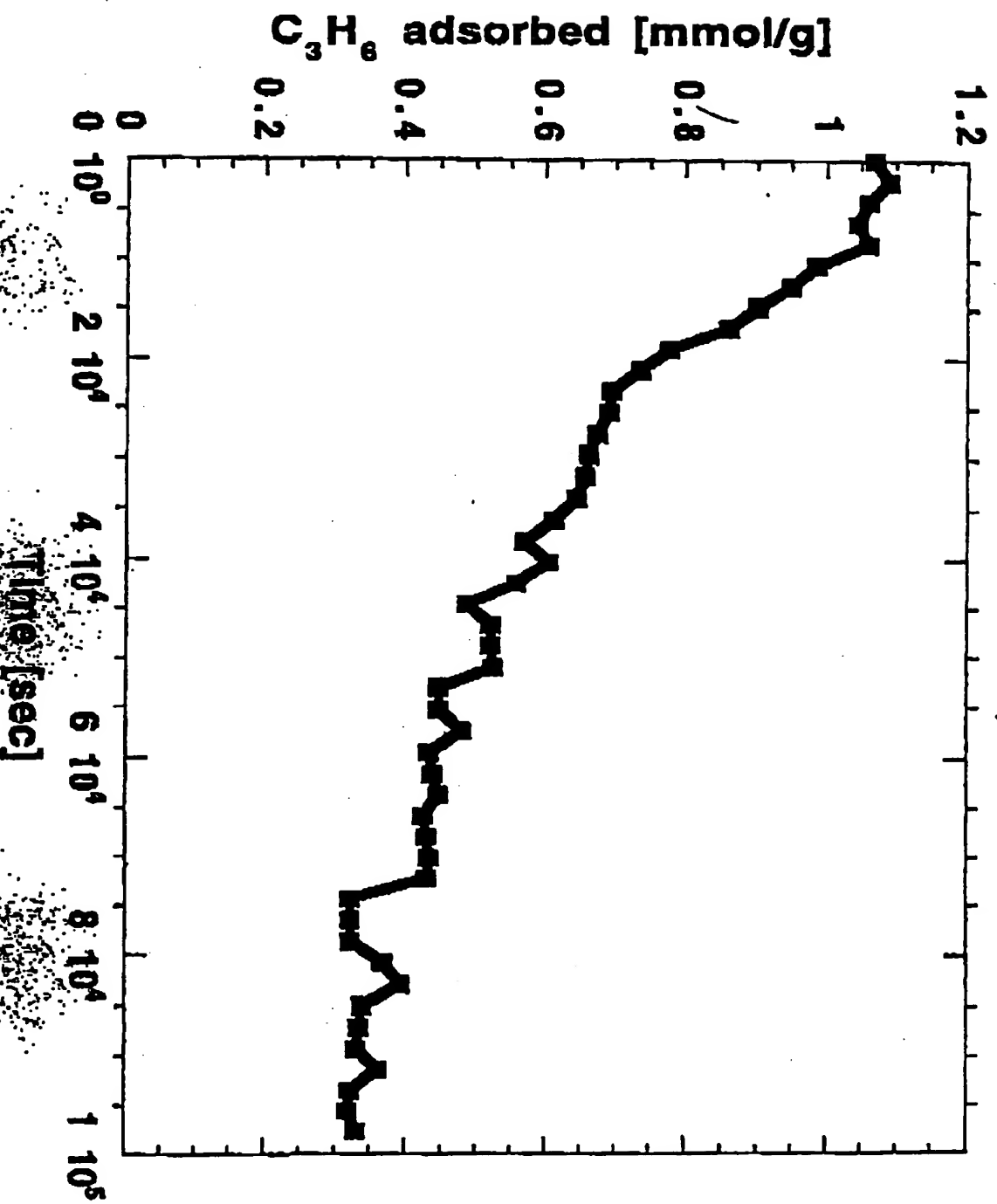


Figure 5

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### H<sub>2</sub>S Adsorption and Desorption on SiO<sub>2</sub> (298K)

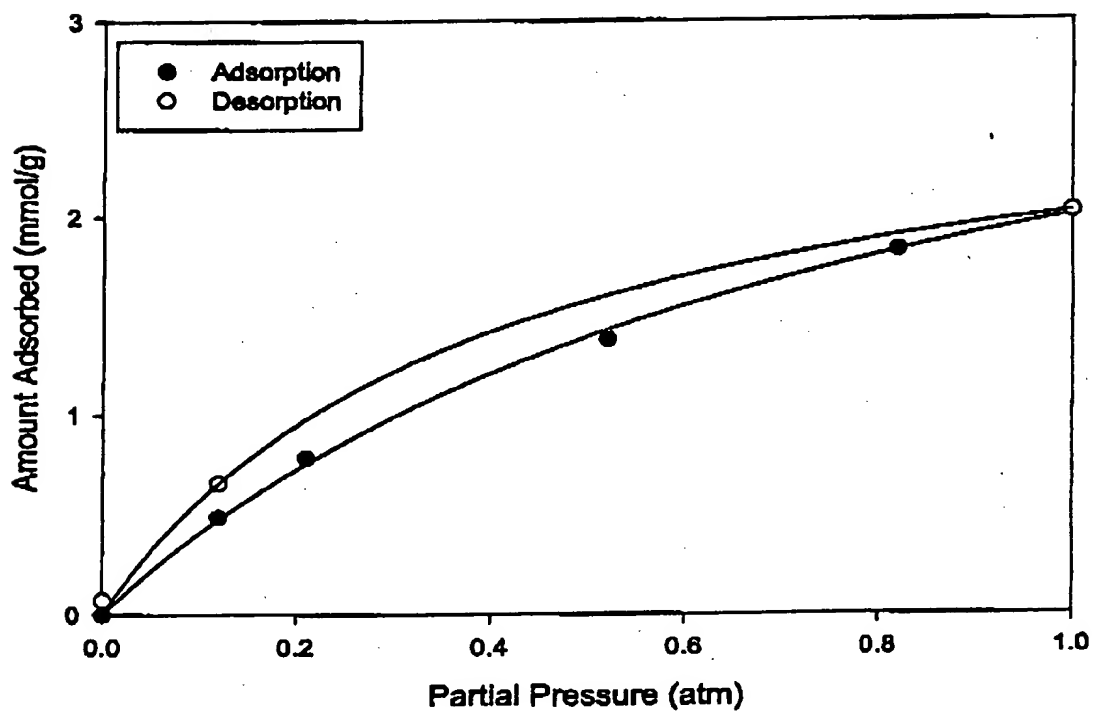


Fig 6

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H<sub>2</sub>S Adsorption and Desorption on AgNO<sub>3</sub>/SiO<sub>2</sub> (298K)

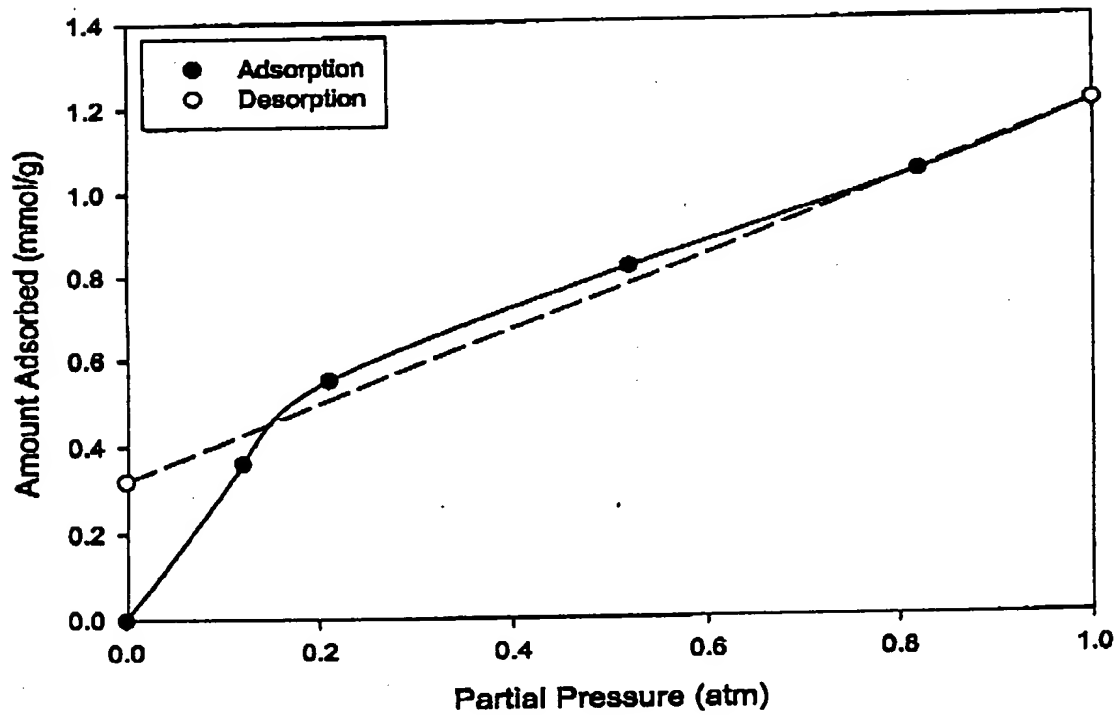


Fig 1

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# **H<sub>2</sub>S Adsorption and Desorption on AgNO<sub>3</sub>/SiO<sub>2</sub> (343K)**

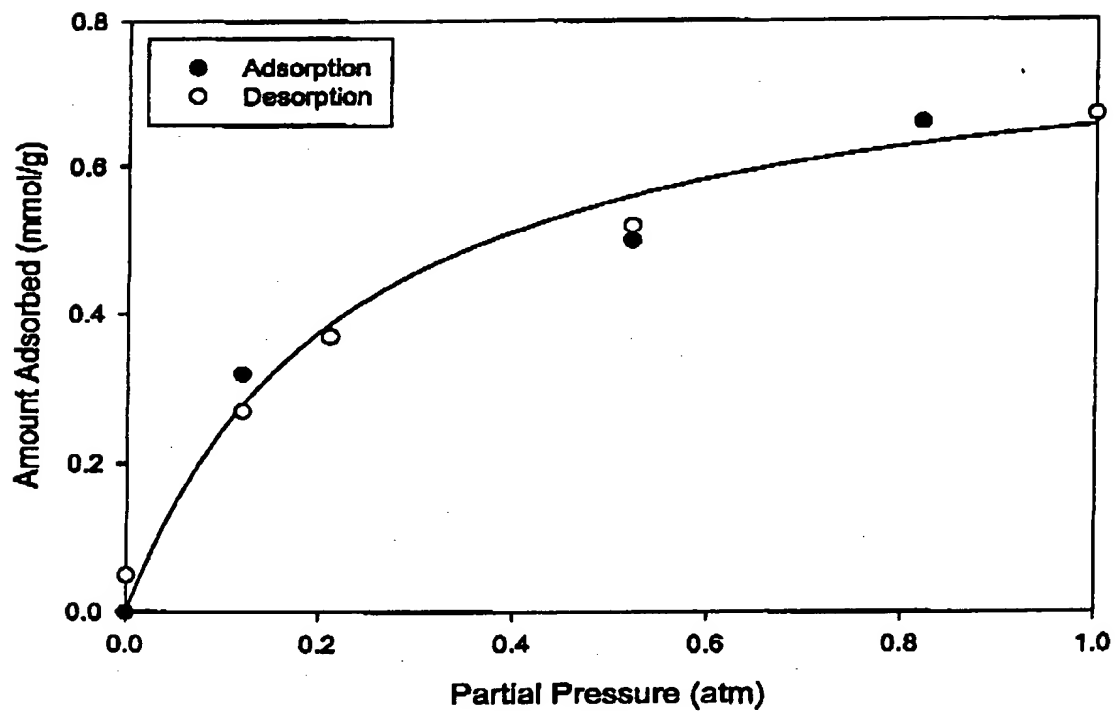


Fig 2

Effect of  $\text{H}_2\text{S}$  Poisoning on  $\text{AgNO}_3/\text{SiO}_2$   
Capacity for  $\text{C}_3\text{H}_6$  (343K)

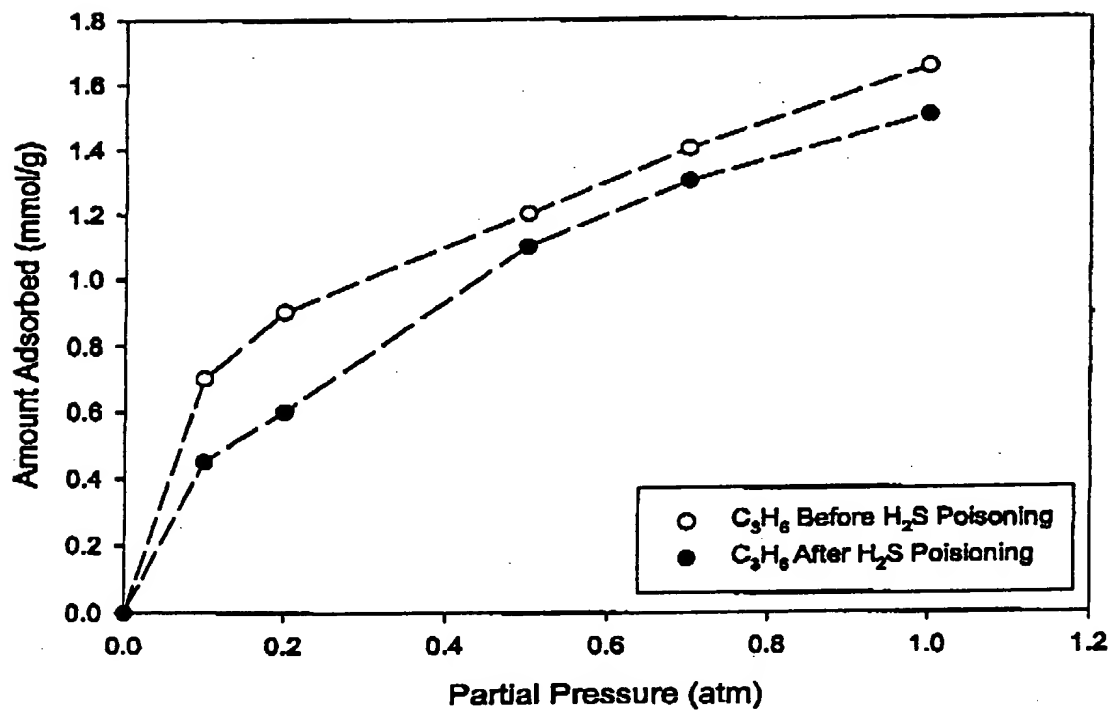
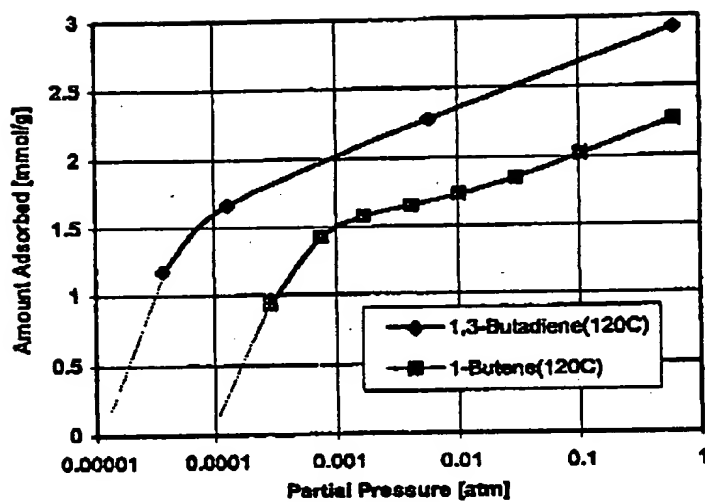


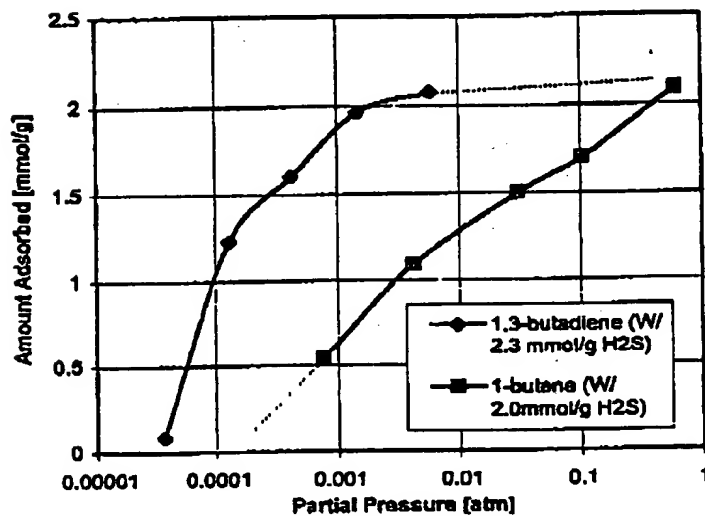
Figure 9



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(a) Before H<sub>2</sub>S exposure

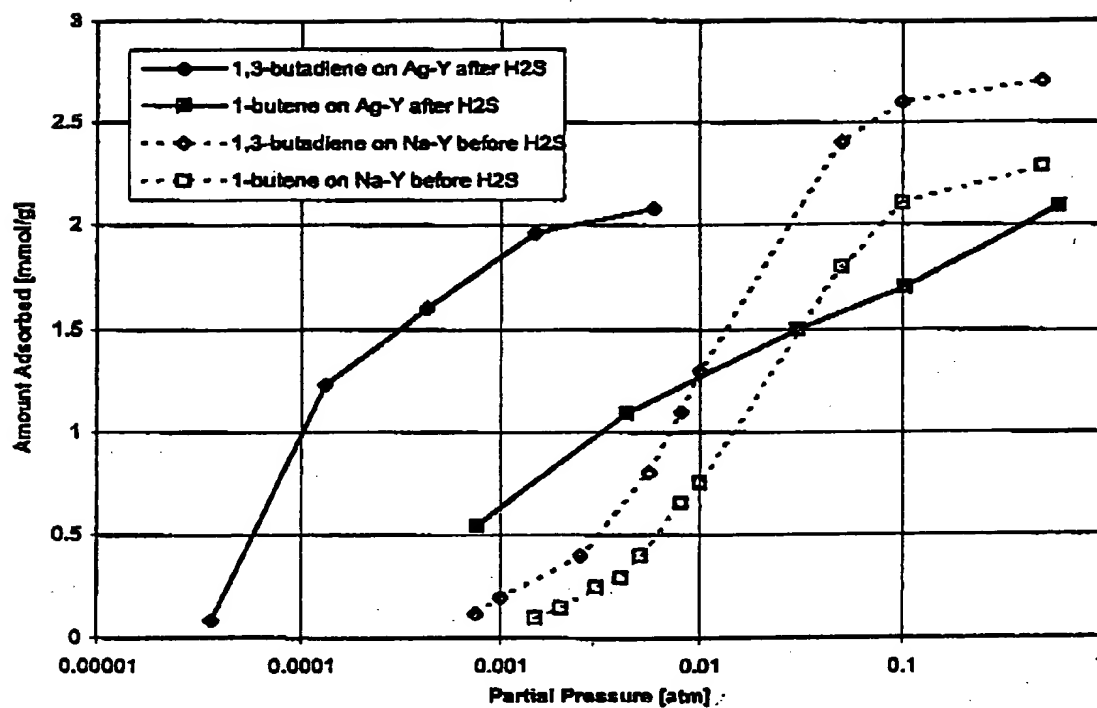


(b) After H<sub>2</sub>S Exposure

Isotherms of 1,3-butadiene and 1-butene at 120 °C.

Fig 10

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Ag-Y after H<sub>2</sub>S exposure v.s. Na-Y before H<sub>2</sub>S exposure

Fig. 11

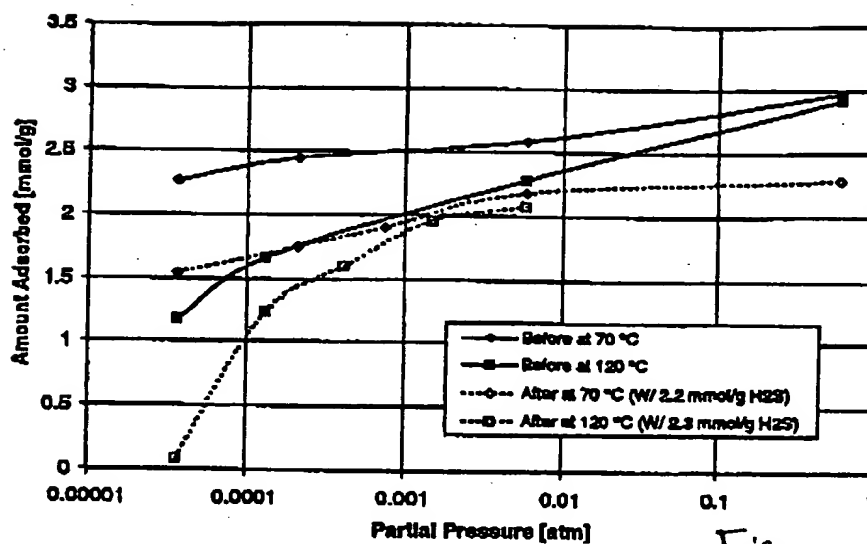


Fig 12a  
Isotherms of 1,3-butadiene before and after H<sub>2</sub>S Exposure

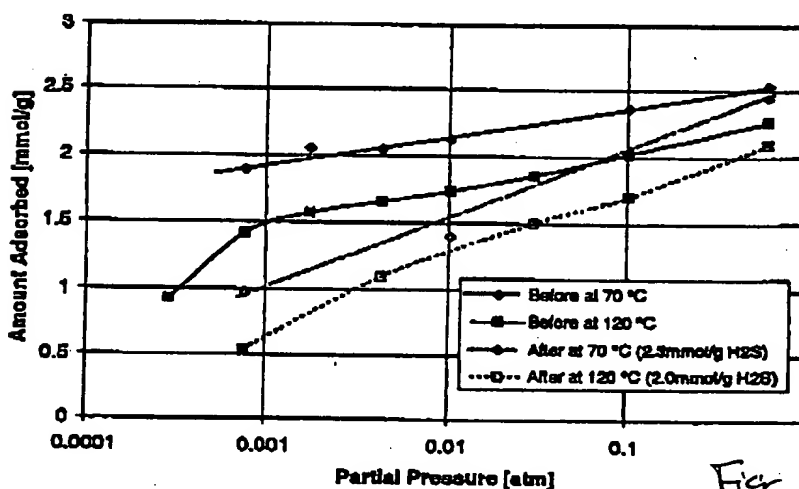


Fig 12b  
Isotherms of 1-butene before and after H<sub>2</sub>S exposure.

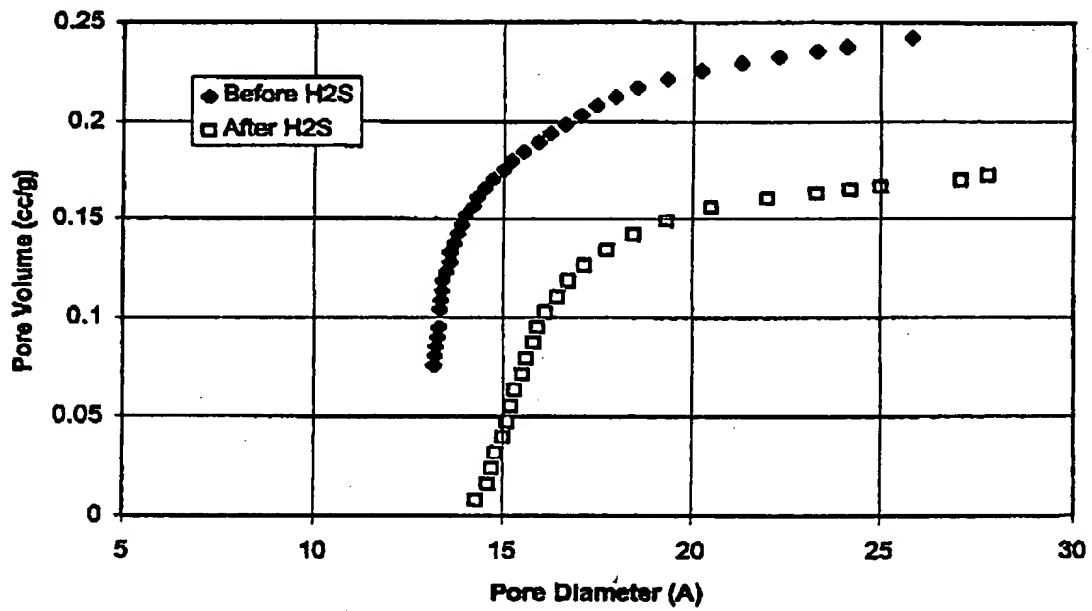
Table. Calculated Heat of Adsorption

	1,3-butadiene	1-butene
Before H <sub>2</sub> S Exposure	24-29 kcal/mol	16-22 kcal/mol
After H <sub>2</sub> S Exposure	7-11 kcal/mol	6-7 kcal/mol

Fig 12c

Fig 12

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Cumulative pore volume of Ag-Y before and after H<sub>2</sub>S exposure.

Fig 13

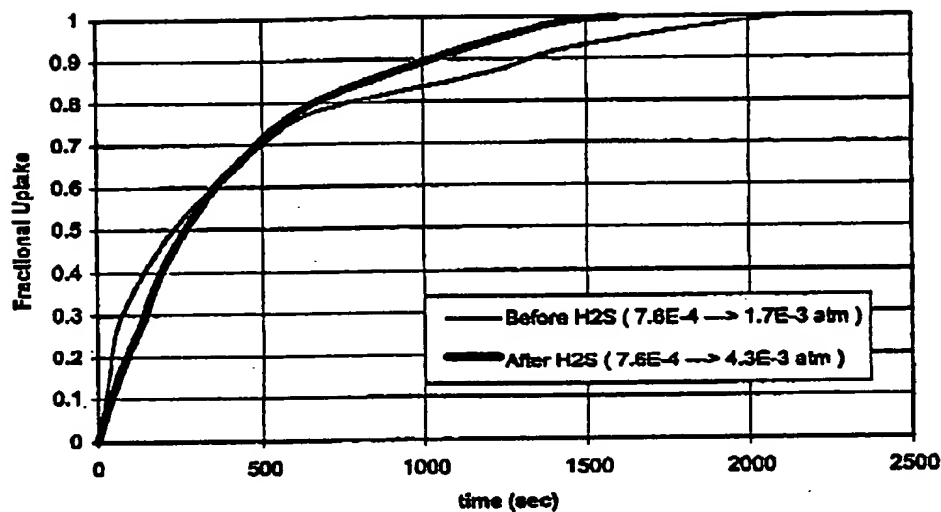


Fig 14 (a) 1-butene at 120 °C

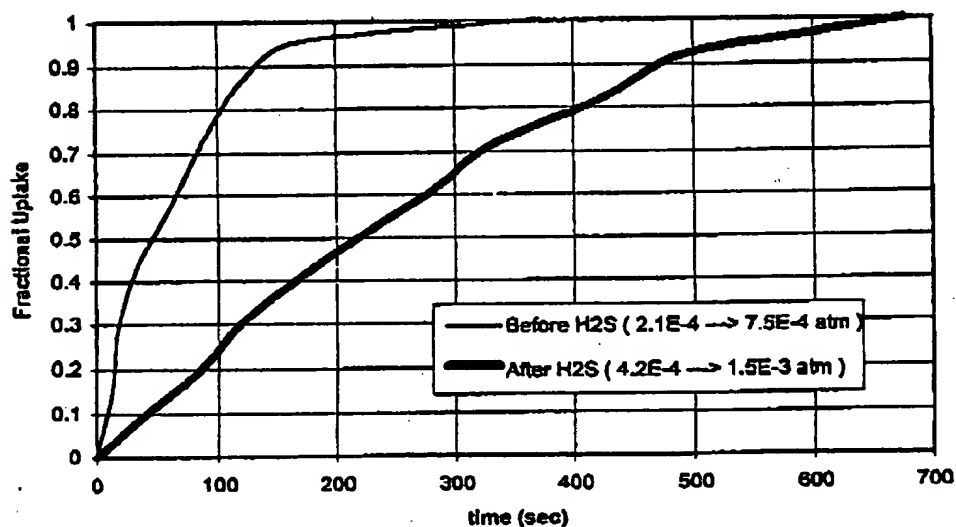


Fig 14 (b) 1,3-butadiene at 120 °C

Fractional uptake curves of 1-butene and 1,3-butadiene before and after H<sub>2</sub>S exposure.

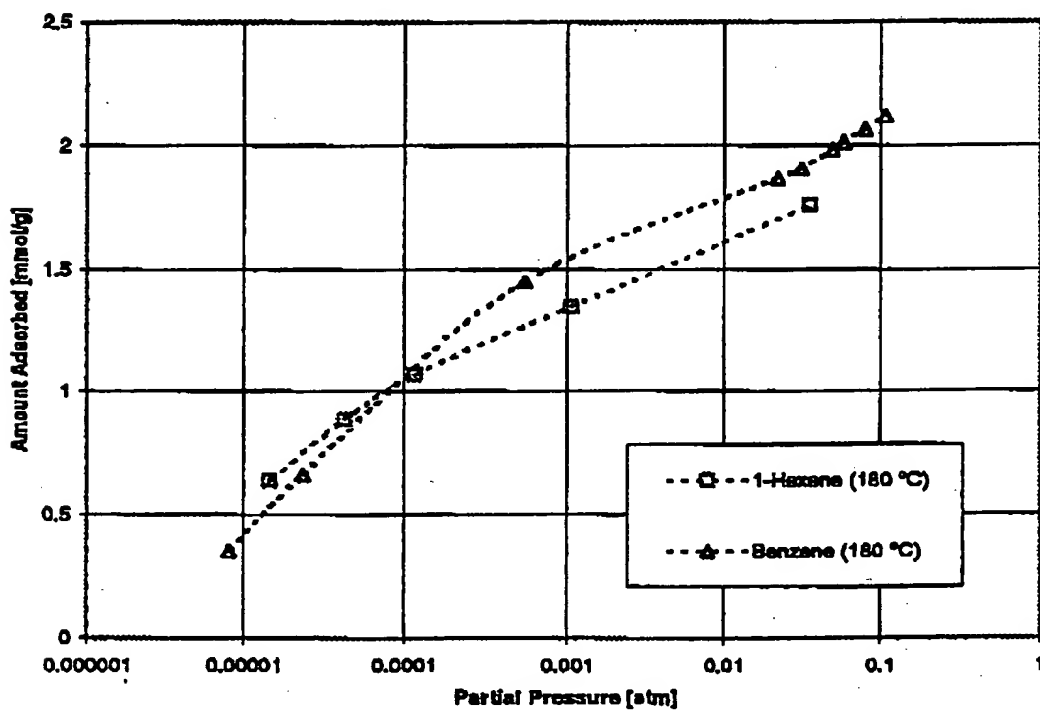
Table. Diffusion time constants (1/s)		
	Before H <sub>2</sub> S exposure	After H <sub>2</sub> S exposure
1-butene	$1.8 \times 10^{-4}$ ( $7.6 \times 10^{-4} \rightarrow 1.7 \times 10^{-3}$ atm)	$1.5 \times 10^{-4}$ ( $7.6 \times 10^{-4} \rightarrow 4.3 \times 10^{-3}$ atm)
1,3-butadiene	$8.7 \times 10^{-4}$ ( $2.1 \times 10^{-4} \rightarrow 7.5 \times 10^{-4}$ atm)	$2.6 \times 10^{-4}$ ( $4.2 \times 10^{-4} \rightarrow 1.5 \times 10^{-3}$ atm)

Fig 14c

Fig 14

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2) Sorbent for purification of 1-Hexene by removal of Benzene.



Isotherms of benzene and 1-hexene on Ag-Y.

Fig. 15

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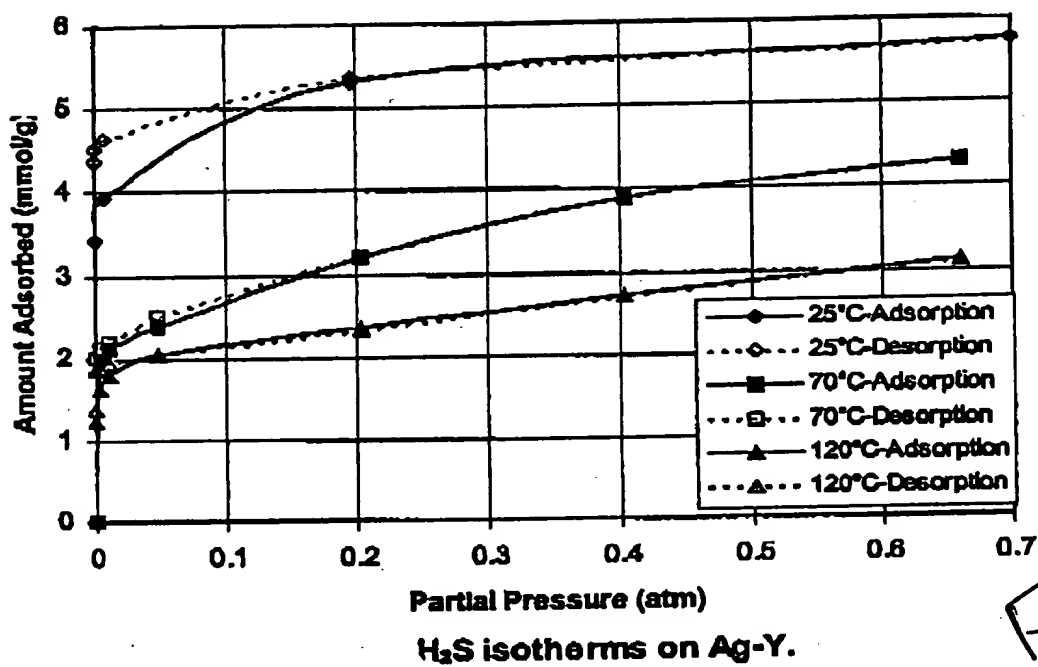
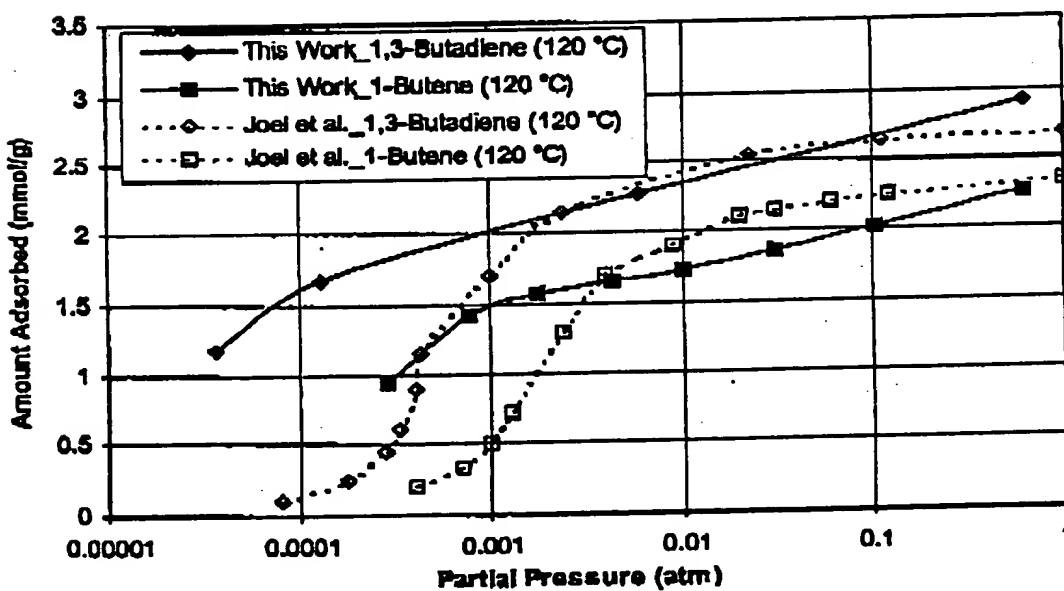


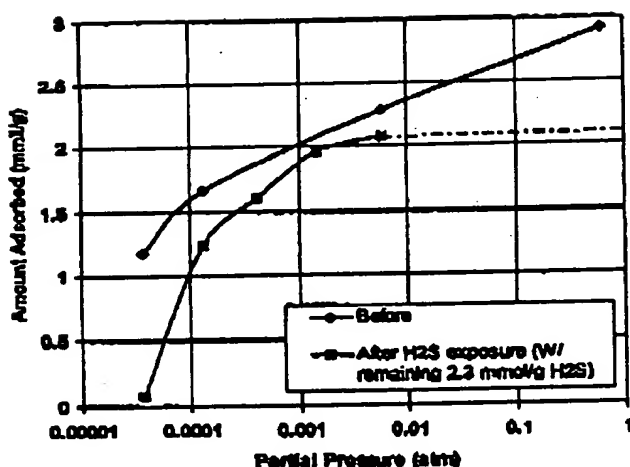
Fig 16



. Isotherms of  $C_4H_6$  and  $C_4H_8$  on Ag-Y at 120 °C.

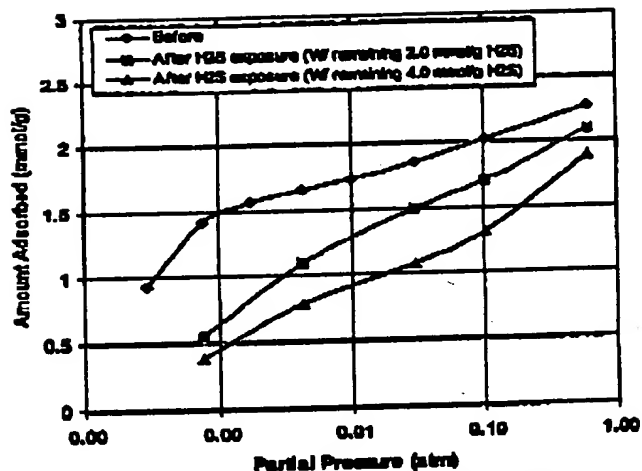
Fig 17

FIG-18

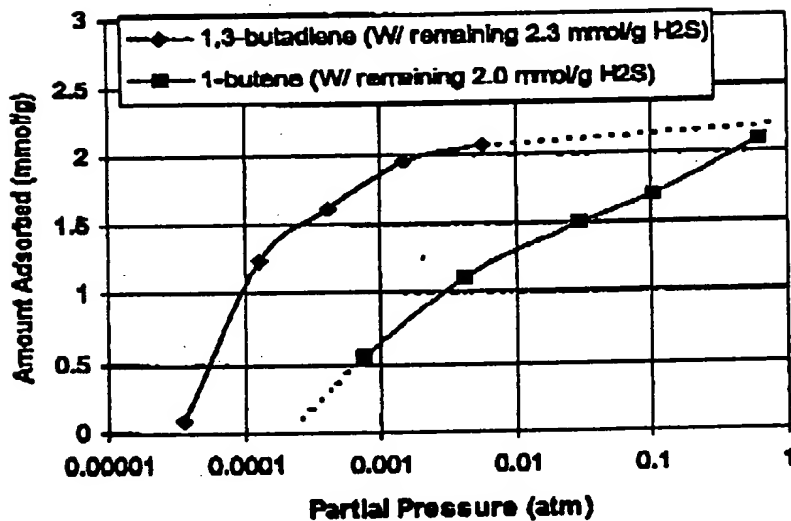


Isotherms of 1,3-butadiene before and after H<sub>2</sub>S exposure at 120 °C.

FIG-19



Isotherms of 1-butene before and after H<sub>2</sub>S exposure at 120 °C.



Isotherms of 1,3-butadiene and 1-butene after H<sub>2</sub>S exposure.

Fig 20